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What to look for when trying to detect a viral pathogen?

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Abstract
Molecular virology has been a multifaceted activity for some years backed by a professional practice of almost 30 years. In it we have incorporated several molecular biotools in the study of disease-causing pathogens in the area of human and animal medicine. According to André Lwoff: Viruses are viruses, so their detection does not vary much between the two medicines, as we will see below.

Introduction

There is no doubt that the fantastic idea of Kary Mullis and other scientists has allowed molecular virology, in addition to being a dynamic discipline, to have incorporated novel methodologies currently in use.

Viruses have special genomes (RNA or DNA) in terms of size, length, or nucleotide sequence. We can easily find these sequences in a special database: the Genbank→ [1], which together with some computer programs allow both the design of primers for a PCR reaction and the corroboration of the identity of the pathogen of interest.

Thus, today it is not possible to have any pretext for not trying to detect a pathogen of interest, whether it affects humans or another animal species and also to propose and give away some methodologies using computer programs even free and online. In a third world country like we could, so you too...!!!!!!

Material and methods

The brilliant idea of Kary Mullis [2], called Polymerase Chain Reaction in concomitance with 2% agarose gel electrophoresis allows to observe the amplification of a DNA fragment of an expected size (conventional PCR). If this fragment is subsequently sent for sequencing and we use some computer programs such as CLUSTAL Omega [3] and BLAST [4], the nucleotide identity of the suspected agent is determined.

When considering the existing information in the Genbank→ together with the program Oligoperfect from Invitrogen → or another similar one, which generates the best primers for the detection of any pathogen by PCR, confirms A. Lwoff's statement and that there is also no pretext for proposing a viral detection protocol, for example.

Another thing is with a guitar, they say, but having samples to carry out the PCR will never be the problem, because from fragments of organs or fluids from which the nucleic acid is extracted. Now, once again, thanks to Clustal Omega and BLAST it is possible to establish the identity of the pathogen, or at least a certain approximation.

Discussion

Undoubtedly, several of the methodologies correspond to scientific innovations and brilliant ideas such as that of Kary Mullis that together with biotools such as Clustal,

BLAST and other similar ones that have been mentioned in various publications in mainstream journals [5, 6] and others of equal importance that have magnified the molecular study of pathogens of veterinary interest [7-17].

It is not for nothing that the brilliant idea of PCR is considered a level of the discovery of the structure of DNA or the theory of relativity, within the scientific legacies in the history of humanity.

Conclusion

Not everything is science for science's sake. Yes, our country has -at least- 35 new medical veterinarians who started without knowing these techniques and today could perfectly establish and develop a molecular methodology for the detection and diagnosis of a viral pathogen.

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